

Abstract Submitted to the
International Conference on Strongly Correlated Electron Systems
University of Michigan, Ann Arbor
August 6-10, 2001

Measuring the Out-Of-Equilibrium Splitting of the Kondo Resonance

Eran Lebanon, Avraham Schiller

Racah Institute of Physics, The Hebrew University, Jerusalem 91904, Israel

A method is proposed to measure the out-of-equilibrium splitting of the Kondo resonance in an ultrasmall quantum dot, by adding a third, weakly coupled lead to the standard two-lead quantum-dot system, and sweeping the chemical potential of that lead. Fixing the voltage bias between the source and drain leads, we show that the differential conductance for the current through the third lead traces the out-of-equilibrium dot density of states (DOS) for the two-lead system. This enables one to measure the dot DOS in the presence of an applied voltage bias. We show that this method is robust, and applies also to the case where the coupling to the third lead is no longer weak.